CLAIMS:

1. A method for processing sound signals for a surround left channel (S_L) and a surround right channel (S_R), wherein a continually varying delay between the resulting signals of the surround right (S_R) and surround left channels (S_L) is generated.

2. A method according to claim 1, wherein the continually varying delay is generated so that the signals of the left and right surround channels (S_L, S_R) are decorrelated at all times.

3. A method according to claim 1 or 2, wherein the left surround channel (S_L) and the right surround channel (S_R) are each split into a number of frequency bands (B_1, B_2, ..., B_n, B'_1, B'_2, ..., B'_n), and each frequency band (B_1, B_2, ..., B_n, B'_1, B'_2, ..., B'_n) of each surround channel (S_R, S_L) is delayed with respect to other frequency bands (B_1, B_2, ..., B_n, B'_1, B'_2, ..., B'_n) of the same channel (S_R, S_L), and also with respect to a corresponding frequency band (B'_1, B'_2, ..., B'_n, B_1, B_2, ..., B_n) of the other channel (S_L, S_R).

4. A method according to any of claims 1 to 3, wherein the surround left channel (S_L) and the surround right channel (S_R) are mixed with other sound channels (F_R, F_L, C) and forwarded to a number of loudspeakers (L1, L2, L3, R1, R2, R3) in such a way as to yield sound output signals (A_1, A_2, A_3, A_4) with a directional arrangement of dipole loudspeaker lobes (DL_1, DL_2, DL_3, DL_4, DL_5, DL_6).

5. A method according to any of claims 1 to 3, wherein the delayed surround channels (S_L, S_R) are stored together with associated sound (F_R, F_L, C, B) and/or video channels in a storage media for later use.

6. A delay management unit (1) for a surround right channel (S_R) and a surround left channel (S_L) of a stereo surround channel (S) with a number of variable delay units (D_1, D_2, ..., D_n, D'_1, D'_2, ..., D'_n) to provide a continually varying delay between the signals of the surround right channel (S_R) and the surround left channel (S_L).

7. A delay management unit (1) according to claim 6, comprising variable delay units (D_1, D_2, ..., D_n, D'_1, D'_2, ..., D'_n) in each surround channel (S_L, S_R) and a control signal generator (6) with control signal outputs (C_1, C_2, ..., C_n, C'_1, C'_2, ..., C'_n) connected to the variable delay units (D_1, D_2, ..., D_n, D'_1, D'_2, ..., D'_n) in such a way as to yield the continually varying delay.

8. A delay management unit (1) according to claims 6 or 7, comprising:

- a frequency splitting arrangement for the left surround channel (S_L) and for the right surround channel (S_R) to split each channel into a number of frequency bands (B_1, B_2, ..., B_n, B'_1, B'_2, ..., B'_n);
- variable delay units (D_1, D_2, ..., D_n, D'_1, D'_2, ..., D'_n) for the different frequency bands (B_1, B_2, ..., B_n, B'_1, B'_2, ..., B'_n) in the surround right channel (S_R) and the surround left channel (S_L) and
- a control signal generator (6) for generating control signals (C_1, C_2, ..., C_{n-1}, C'_1, C'_2, ..., C'_{n-1}) to control the variable delays (D_1, D_2, ..., D_n, D'_1, D'_2, ..., D'_n) in such a way as to delay each frequency band (B_1, B_2, ..., B_n, B'_1, B'_2, ..., B'_n) of each surround channel (S_L, S_R) with a continually varying delay with respect to other frequency bands (B_1, B_2, ..., B_n, B'_1, B'_2, ..., B'_n) of the same channel (S_L, S_R), and with respect to a corresponding frequency band (B'_1, B'_2, ..., B'_n , B_1, B_2, ..., B_n) of the other channel (S_R, S_L).

9. A delay management unit (1) according to claim 7 or 8, where the control signal generator (6) comprises a signal source (G) and a signal modifier arrangement (M_1, M_2, ..., M_{n-1}) which together provide control inputs (C_1, C_2, ..., C_{n-1}, C'_1, C'_2, ..., C'_n) for the delay units (D_1, D_2, ..., D_n, D'_1, D'_2, ..., D'_n).

10. A sound processing system (2, 2') comprising a delay management unit (1) according to any of claims 6 to 9.

11. An acoustic system (3), said system comprising:

- a source of a number of distinct sound channels (F, S, C, B) including a surround left channel (S_L) and a surround right channel (S_R);
- an sound processing system (2) according to claim 10 for processing the sound channels (F, S, C, B);

- and a number of loudspeakers (L1, L2, L3, R1, R2, R3) for converting the processed sound channels (A_1, A_2, A_3, A_4) into audible sound;

12. An acoustic system (3) according to claim 11, where the number of loudspeakers (L1, L2, L3, R1, R2, R3) are arranged to form an array and where the sound processing system (2) comprises a mixing unit (4) for mixing sound input channels (F, S, C) to give sound output channels (A_1, A_2, A_3,), and forwarding sound output channels (A_1, A_2, A_3, A_4) to the loudspeakers (L1, L2, L3, R1, R2, R3) in such a way as to yield a directional arrangement of dipole loudspeaker lobes (DL_1, DL_2, DL_3, DL_4, DL_5, DL_6) for the sound input channels (F, S, C, B).

13. A mixing unit (4) for a sound processing system (2) with a number of distinct sound channels (F, S, C) including a surround left channel (S_L) and a surround right channel (S_R) comprising:

- line inputs (100, 200, 300) for the sound channels (F, S, C);
- line outputs (101, 201, 301) for connection to loudspeakers (L1, L2, L3, R1, R2, R3);
- a means for mixing the sound channels (F, S, C) to give sound output channels (A_1, A_2, A_3) in such a way as to yield a directional arrangement of dipole loudspeaker lobes (DL_1, DL_2, DL_3, DL_4, DL_5, DL_6) and forwarding the sound output channels (A_1, A_2, A_3) to the line outputs (103, 203, 303);
- a delay management unit (1) according to any of claims 6 to 9 to generate a continually varying delay between the surround right and surround left channels (S_R, S_L).

14. A mixing unit (4) according to claim 13, comprising a user-configurable delay arrangement (5) for delaying the signals of the different sound channels (F_R, F_L, S_R, S_L, C) with respect to each other in such a way as to direct dipole loudspeaker lobes (DL_1, DL_2, DL_3, DL_4, DL_5, DL_6) for at least some of the sound channels (F_R, F_L, S_R, S_L, C) by choosing suitable delay scale values.

15. A studio system comprising a sound processing system (2') according to claim 10.

16. A computer program product directly loadable into the memory of a programmable sound processing system (2, 2') comprising software code portions for performing the steps of a method according to claims 1 to 5 when said product is run on the sound processing system (2, 2').

5

17. A memory medium storing a data file comprising sound and/or video channels including surround sound channels delayed using a method according to any of claims 1 to 5.